

Cable Europe Comments on the Berkman Center for Internet and Society Study: Next Generation Connectivity

18 December 2009

The European cable TV industry currently provides broadband, telephony and digital TV to approximately 73 million customers. Cable Europe¹ represents Europe's leading cable TV operators and their national trade associations. The aim of Cable Europe is to promote and defend the industry's public policy positions and business interests at both European and international level, and to foster co-operation among its members.

Cable Europe welcomes the opportunity to comment on the Berkman Study 'Next Generation Connectivity'.

In many Member States, providers of electronic communications services have recently announced, or are already engaged in, the deployment of next generation access (NGA) networks for the provision of very high-speed broadband services. The deployment of NGA networks is a crucial component both for economic recovery and the future competitiveness of the EU, yet poses important regulatory challenges to national regulatory authorities (NRAs).

The Berkman Study concludes that 'a one size fits all' approach based on Open Access would lead to the development of Next Generation Connectivity on a significant scale.

We believe that such a conclusion is not valid given the important role of cable in driving infrastructure competition in all EU markets with a cable presence. It is the existence of at least one challenger network, mainly cable, which has driven investments in broadband innovation leading to higher speeds and higher broadband coverage. By contrast facilities-based competition based on open access regulation is generally viewed as leading to lower retail prices but only in the short term and plays only a minor role in investment upgrade decisions by the incumbent in comparison with infrastructure competition.

Given the significant role the policy choices of regulators have had and will continue to have on the investment decisions of NGA operators, Cable Europe and its members believe it is essential the FCC takes fully into account the competitive market dynamics at play in Europe. These dynamics demonstrate how infrastructure competition between different technological platforms are delivering both innovation, investment and vibrant competition,

¹ **Cable Europe** is the Brussels-based European Cable Communications Association – www.cable-europe.eu

often in circumstances where open access regulation has failed to provide this kind of competitive context.

Broadband Development and Competition

By providing very high speed broadband products and a wide range of analogue and digital TV content, the European Cable industry consistently supports the development of the European information and knowledge society. Substantial ongoing investment into networks and product development means European cable plays a prominent role in developing the European entertainment and communications markets.

Overall the European Cable industry generates a turnover of €18bn on an annual basis of which, on average 25% is reinvested into further network build out².

The Cable industry is one of the most powerful drivers of the European broadband market. Often being the first to offer real infrastructure-based competition to the telecommunication incumbents, cable operators have spurred competition in the telecommunications industry. As Cable networks allow for high bandwidths at moderate prices, affordable cable broadband offers are forcing fixed-line operators to follow suit with network investments enabling competitive high speed broadband access.

Broadband Penetration and Infrastructure-based competition

With the driver of broadband competition shifting from a service-driven to an infrastructure-based level, cable operators have significantly impacted the European broadband landscape. Competition in the telecommunications market is recognized as boosting service uptake and, with infrastructure-based competition, is likely to provide the most long-term benefits to consumers.

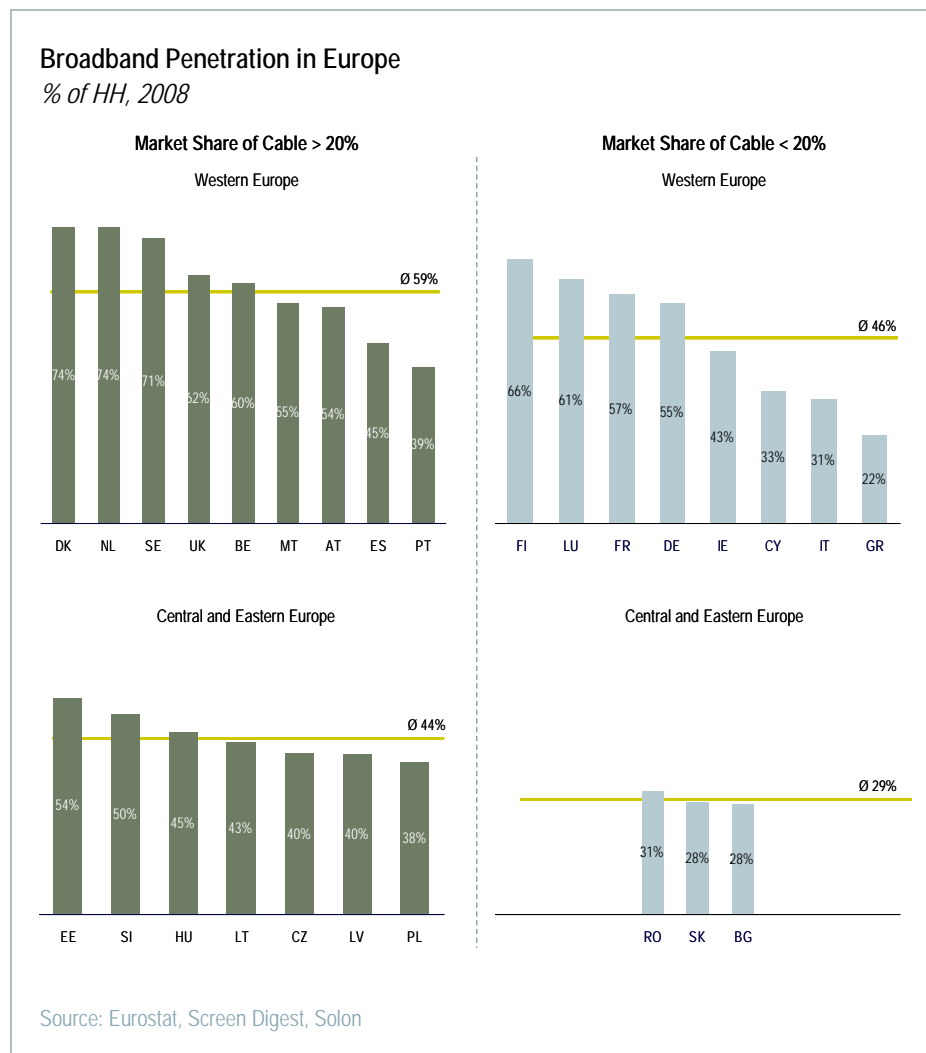
The speed of broadband uptake varies across Europe, with Western European countries generally showing higher penetration rates than central and Eastern European (CEE) countries, as demonstrated by Solon³. Infrastructure competition is a key driver for broadband penetration in addition to GDP per capita, technological knowledge and affinity.

In Western Europe, markets with strong infrastructure competition from Cable (Netherlands, Belgium) or both Cable and Fibre-to-the-home (Denmark, Sweden) show the highest broadband penetration. The average broadband penetration in countries with a significant share of Cable internet is at 59% close to 30% higher than in markets with a relatively low involvement of Cable operators in the broadband market (average broadband penetration of 46%).

² Solon Management Consulting, *Cable Industry in Europe*, October 2009

³ Solon Management Consulting, *op.cit*

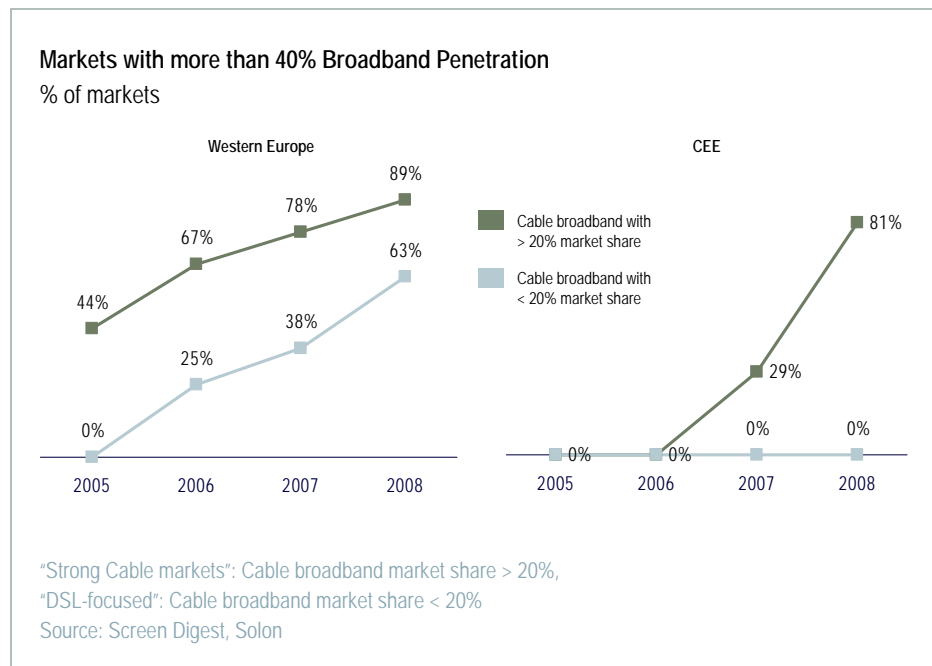
For CEE broadband markets, Cable is of even greater importance. In most CEE markets, Cable accounts for more than 20% of broadband households. Penetration in strong Cable markets surpasses take-up in DSL dominated markets by 50%. While the average broadband penetration in "Cable markets" equalled 44% end of 2008, it only reached 29% in "DSL markets". Without the investments of Cable operators, CEE markets would not have been able to reach their current penetration levels and Europe's digital divide would be even larger.



Broadband penetration in markets with infrastructure competition, driven by cable, is not only higher than in markets with limited infrastructure competition also stimulates higher penetration considerably earlier.

In 2008, close to 90% of all Western European markets with strong cable broadband activity had broadband penetration rates of at least 40%, whilst only 63% of DSL-focused markets surpassed this mark. In CEE markets the 40%-mark has so far only been attainable with a strong Cable broadband activity.

Markets dominated by DSL have only started catching up after Local Loop Unbundling (LLU) regulation and ULL pricing was revised⁴. In recent analysis by Solon⁵, it is estimated that Cable-driven broadband markets are approximately 2 years ahead in broadband penetration than their DSL/ULL driven counterparts.



The existence of sustainable Cable infrastructure-based competition not only supports higher penetration rates, it also reduces the need to heavily regulate these markets in order to drive NGA investment and innovation.

Performance and Pricing

Structural differences between DSL and Cable networks coupled with end-to-end infrastructure control and operation generally enable Cable operators to provide better price-performance ratios than DSL providers – especially

⁴ ULL regulation required incumbent telecommunication operators to allow their competitors to connect their own backbone network to the customer access network, the so-called “last mile”, which is owned by the incumbent. ULL operators then rent the “last mile” from incumbents.

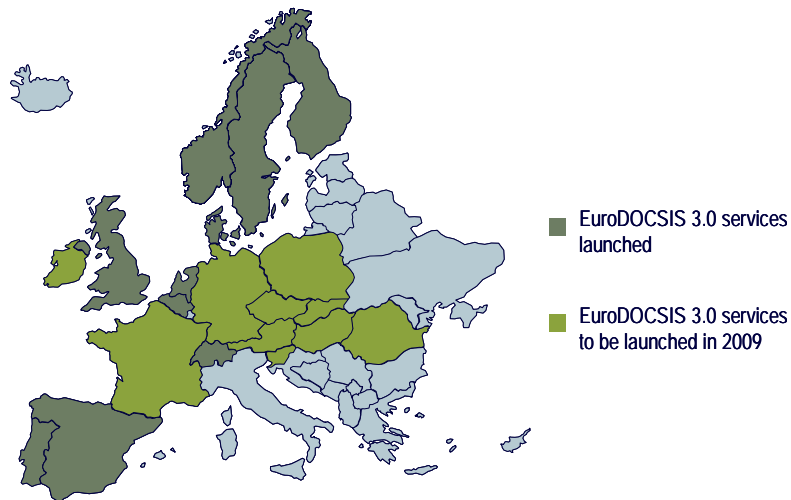
⁵ Solon Management Consulting, *op.cit*

compared to access based operators that have to pay for “last mile” access to incumbent’s local loop.

EuroDOCSIS 3.0 basics and European roll-outs

DOCSIS stands for Data over Cable Service Interface Specification, originally developed by CableLabs in the US, and defines interface requirements for cable modems involved in high-speed data distribution over an existing Cable TV system.

The latest version of this standard, DOCSIS 3.0 (or EuroDOCSIS 3.0 in Europe) represents a significant progress for Cable operators, making much higher bandwidths available to end-customers at a lower per household cost than FttH build. Now, speed levels of up to 160 Mbps downstream can be reached, which is a significant increase on DOCSIS 2.0 (32 Mbps). Further channel bonding could allow maximum speeds up to 400 Mbps using the same base HFC infrastructure. Moreover, DOCSIS 3.0 will also allow much higher upstream speeds, currently up to 120 Mbps, and such symmetry of speeds will become increasingly important.



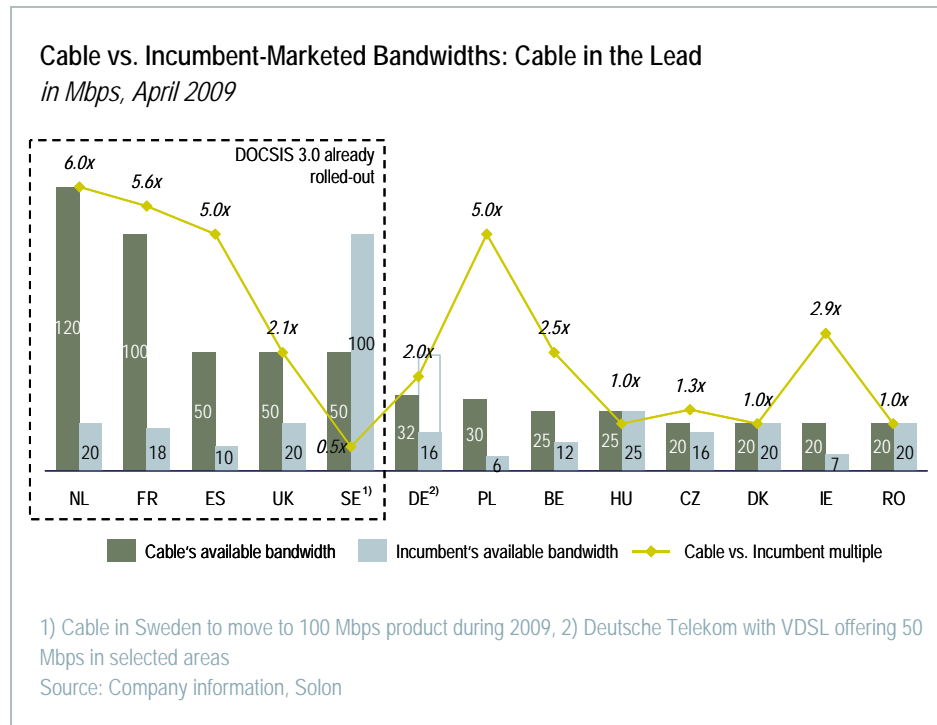
Compatibility along versions has also been ensured in each version of the standard, *i.e.* End user equipment designed for one standard version can be used in another, be it an older or a more recent version of DOCSIS.

Source: Cable Europe, Solon

Supported by the implementation of EuroDOCSIS 3.0, Cable operators will continue to spearhead the introduction of real high speed broadband services. Whereas in 2007, more than 80% of European Cable broadband users

subscribed to download rates higher than 2 Mbps, only 56% of DSL subscribers exceeded the 2 Mbps threshold⁶.

The quest for speed continues. Europe's Cable CEOs now expect that by 2012 40% of their subscriber base subscribes to speed levels of 10-50 Mbps, 20% even subscribing to very high speed levels of 50 Mbps and more⁷.



Network Investments

Cable customers are not the only ones to benefit from Cable's very high-speed offers. By establishing high-speeds, the Cable industry has given the overall broadband market new momentum, forcing fixed-line operators to follow suit with network investments and fibre roll-outs. Although DSL infrastructure may be sufficient for many of today's applications, it will not be able to fulfil future bandwidth needs of new, video-based services. Simultaneous use of multiple high-bandwidth applications is already testing ADSL2+ to its limits.

Even if we consider that current usage scenarios requiring bandwidths of more than 16Mbps (*i.e.* watching multiple SD or HD TV streams at the same time) do not constitute the majority of usage in Europe, the popularity of high-bandwidth applications will increase significantly over the next few years.

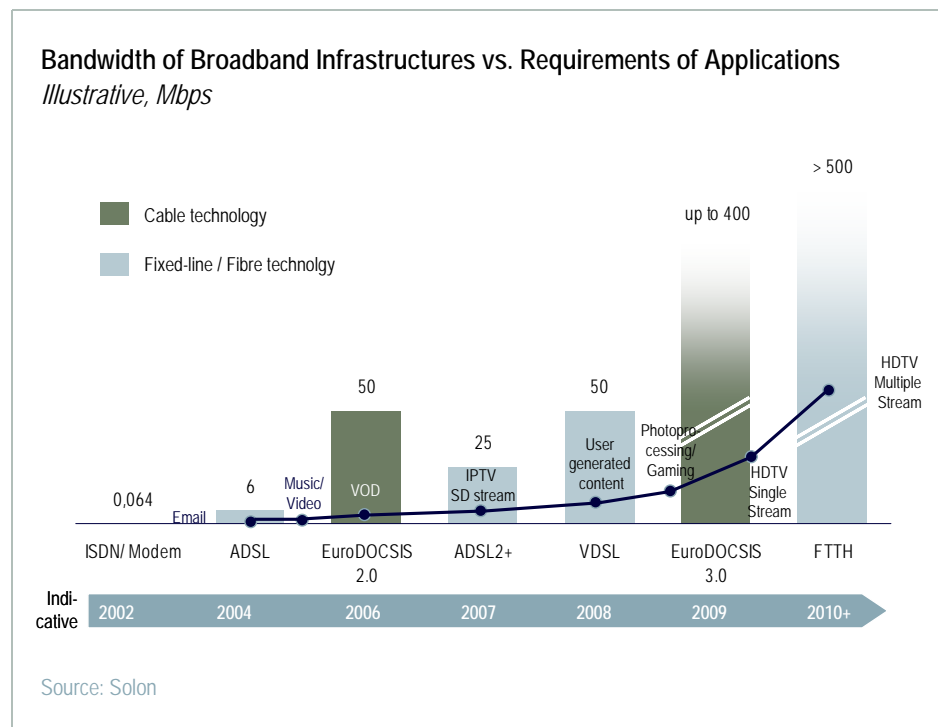
⁶ IDATE, *Broadband Coverage in Europe*, 2008.

⁷ Solon Management Consulting, *Solon European Cable Survey 2009*, 2009.

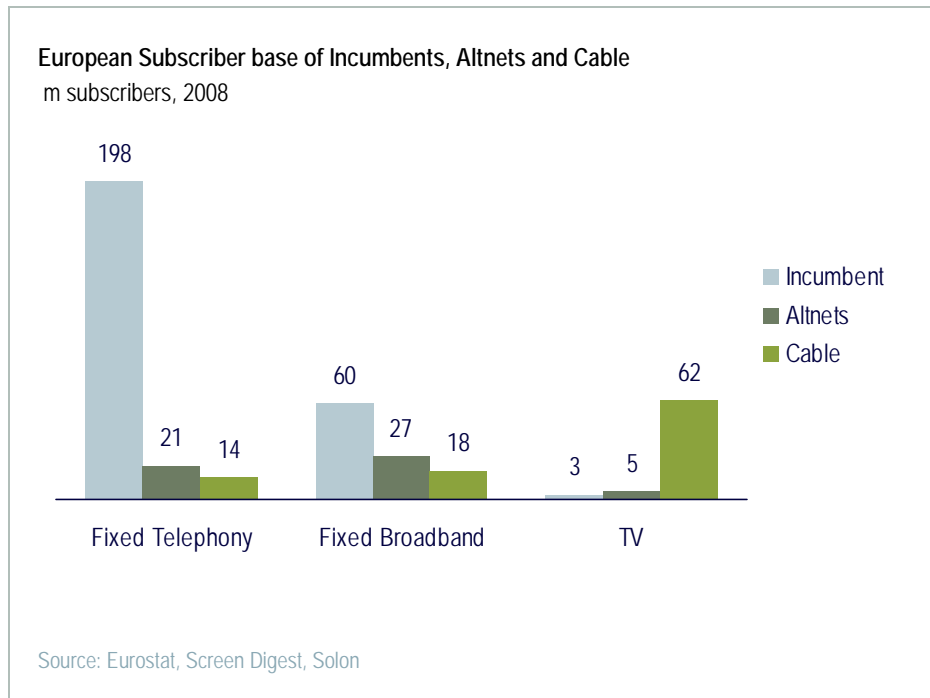
Policy makers should be cautious of overly pessimistic views of demand for fibre-based services. Investment in infrastructure must be accompanied by a competitive model for services and content, as it is the latter that will drive the investment in NGA networks. Only VDSL, Cable and FTTH will then be able to provide sufficient bandwidth to deliver multiple high-bandwidth applications.

Even without further upgrades, most Western European Cable providers can already offer downstream speeds of up to 32 Mbps. After implementing the new EuroDOCSIS 3.0 standard, speeds could reach the extraordinarily high speed of up to 400 Mbps (using further channel bonding). In order to keep up with the bandwidths available via Cable, fixed-line operators will have to invest in their legacy networks and roll-out of high-speed next generation networks.

In addition to their own significant investments in next generation networks, **Cable operators act as a catalyst for network investments by other telecommunications players**, making the Cable industry one of the most important drivers in the roll-out of a future-focused high-speed broadband infrastructure.



The significant impact the Cable industry has on the European Broadband market is noteworthy given its comparatively limited revenues. For example, Fixed-line incumbents still account for 71% of telecommunications revenues whereas Cable operators' share is much less significant in absolute terms with communications revenues of €7.4bn in 2008 or 2% of total telco revenues.



Compared to the telecommunications industry, most Cable operators are relatively minor players in the converging communications and entertainment markets yet still have a remarkably positive influence on overall market development in Europe.

Cable Europe is of the opinion that **the role of cable in delivering sustainable infrastructure-based is an essential one, and something which cannot be overlooked by the FCC in their assessment of the Berkman Centre's report.**

Investment incentives, access pricing and infrastructure competition

Cable Europe also cautions against regulatory approaches that would **risk encouraging inefficient entry based on below-cost wholesale inputs, to the detriment of genuine infrastructure-based competition.**

The implications of this approach are profound. Such an approach would lead to insufficient recognition of the role that cable can (and does) play in delivering infrastructure-based competition and have **negative implications for cable investment, past and present.** The condition necessary to promote efficient investment in infrastructure is a fair access pricing regime which reflects investment risk but which discourages wholesale prices detrimental to infrastructure investment already made, or about to be made.

Of particular concern is the risk that cable faces competition from other operators relying on below-cost passive wholesale inputs priced on the basis of the current costs accounting of a former monopoly, or on active wholesale broadband access inputs that are similarly mispriced. Whereas this might

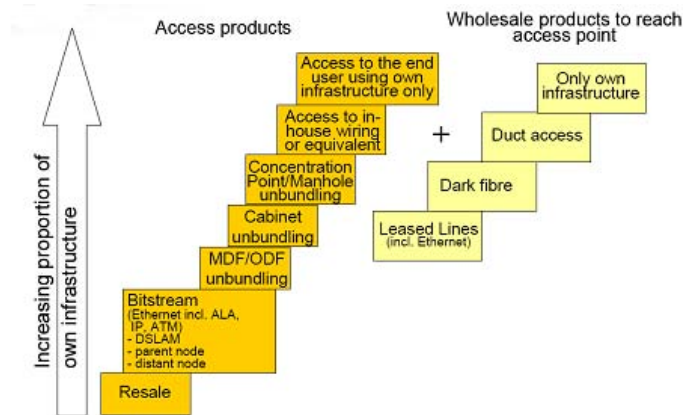
provide asymmetric regulatory assistance for entry to non network operators (and their business cases) it will be detrimental to cable's past and future investments. We however believe that cable investment is sustainable, future-proof and key to guarantee long term competition in a NGA environment.

Such a policy would introduce a bias towards non-facility based new entrants vis a vis cable operators as the latter have to compete with incumbents in spite of their much lower scale economies without receiving the benefit of a lower access price.

Any regulation should be neutral as to the source of "infrastructure competition" whether it originates as a fibre deployment or by means of an alternative technology such as a cable HFC DOCSIS deployment.

Regulatory policy which serves to promote genuine infrastructure-based competition should allow operators to invest and deploy technologies that are independent of the SMP operators' network.

The last European Regulators Group (ERG) Report on NGA economic analysis and regulatory principles concludes that the highest rung in the NGA ladder of investment is "Direct access to the end user" can only be reached with "own infrastructure"⁸:



In certain circumstances, and as demonstrated by economic analysis of broadband penetration, competition and pricing, it is clear that effective competition can be achieved with two end-to-end independent infrastructures in place. Accordingly we believe that **competition between independent infrastructures should be encouraged as the most beneficial for investment and ultimately end-users.**

Public investment in Broadband development

⁸ ERG, Report on Next Generation Access - Economic Analysis and Regulatory Principles, June 2009, p.14 and figure 1.

The Berkman study mentions the role government can have to invest in the deployment of broadband networks. Public involvement in European broadband markets has increased significantly over the past few years. Recent public broadband initiatives have not only involved investments in rural areas, but also the deployment of networks in urban areas where private broadband infrastructures are in most cases already in place.

While public involvement can make an important contribution to the development of a knowledge-based European economy, it also runs the risk of distorting both the present and future competitive structure and investment signals, which can in turn interfere with the commercial incentives to deploy NGA networks. This would be the case if such public intervention involves the granting of State Aid. Accordingly, it is necessary to adopt clear-cut and predictable State Aid rules concerning broadband deployments using State money.

Cable Europe takes the view that State Aid for broadband investments must not distort existing infrastructure competition, nor should it undermine the preconditions usually associated with the development of competition. Cable Europe supports the public funding for the development of networks in areas where, due to market failures, it exists a persistent lack of commercial initiative by any private infrastructure providers to invest in the building of new, or the upgrading of existing, infrastructure. However, in such cases, State Aids should be proportionate to the market failure they intend to correct. For example, instead of crowding out the private initiative by deploying a full network to the end customers from scratch, State Aid could take the form of funding a trunk network to towns with a lesser population density so that private investors could find profitable to deploy their access networks there. Cable companies might be willing to team up with public authorities to invest in these areas. This is why fair open tenders are the most essential element of the funding process, as they provide cable companies the possibility of participating on a level playing field in the tenders for such development projects.

Conclusion

Cable Europe has real concerns with regards to the conclusion of the Berkman Study supporting 'open access' as the valid regulatory approach to the deployment of Next Generation Connectivity. Such an approach can indeed not be validated by European experience of the role of cable driving hard platform competition with incumbent network operators.

A facilities-based approach would be detrimental to cable operators, put past and future investments at risk and induce inefficient entry. Business cases for further investment in fibre by cable operators should not be distorted by conditions that make access available at uneconomic levels.

To effectively stimulate continuous innovation and network expansion, it is critical for markets to preserve long-term competition amongst infrastructure players. Most fixed infrastructures today can, in fact, be upgraded to NGA with the right investment incentives. A policy environment should be created that allows investments be market & completion driven and based on sound economics reflecting genuine consumer demand and a willingness to pay.